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THE MOON AT ITS RISING.

THE RUINS OF CENTRAL AMERICA.

PART VI.

THE village of Comalcalco, the next scene of our labors, is in the State of Tabasco, lying thirty-five or forty miles to the north-west of San Juan Bautista, the State capital. We reached this place on the 12th of November, and that same day, in the company of the Gefé Politico and a few of his friends, I paid a visit to the neighboring ruins. Here we found no longer simple pyramids but veritable *mountains (cordilleras)* of ruins, overgrown with a luxuriant vegetation, through which it is impossible to make your way except with the aid of the *machete*.

The only one of the pyramids which I climbed, for the purpose of making a rapid survey of the ground, is situate about two miles to the east of the village, on the right bank of the Rio Seco. The first ruin that attracted my notice was a square tower, surmounted by a gigantic tree, like the famous tower of Palenque. To the north of this is a great edifice, consisting of two parallel halls. Here again we are reminded of Palenque, but this building is much larger than any in that place; besides, it has *three square windows*, whereas the buildings at Palenque have none. Farther on we see the remains of some enormously massive walls, consisting of very thin red bricks, with a layer of mortar more than twice their thickness between the courses. So much I was able to note in one half-hour: we were then compelled to return to the village, as it was night-fall. I have received information of other ruins to the west of the village, where are to be seen large sculptured stones. The abundance of ruins is no surprise to me, for I was already aware that the whole State of Tabasco and a part of Chiapas are covered with ruins; and I brought upon myself no little ridicule by asserting as much after my first expedition. I maintained then that Palenque was no such vast city as it was commonly supposed to have been, but rather a

great religious center. I had at hand the proofs of this assertion, but I discreetly withheld them at that time. To-day, facts are confirming me, and I am in hopes of yet finding something more notable even than Comalcalco, which itself was a more considerable place than Palenque, albeit the ruined condition of its structures will prevent it from attracting so much attention as the latter place.

November 15th.—During the past night the wind was from the north, and, as usual in this latitude, brought in its train a heavy rain-fall. No work can be done for the three days that the storm is expected to continue. I was misinformed before I came here about the dry and wet seasons of Tabasco. The rainy season proper extends only from June to the end of October, but then come the northers, lasting for one, or three, sometimes for fifteen days, and invariably attended by heavy rains. I spend this time of enforced inaction in conversing with the natives and learning their traditions. One landed proprietor informed me that on his estate he had counted more than three hundred pyramids, all of them covered with ruins! This region must at one time have contained a very large population. At Blasillo, fifty or sixty miles to the west, are some architectural remains in a better state of preservation than those of Comalcalco.

When the Spaniards skirted the coast of Tabasco on their first expedition to Yucatan, they saw on the shore and far in the interior a multitude of structures whose white and polished walls glittered in the sun: their crumbling remains are to-day found everywhere throughout this region, from the coast up to the mountains of the interior. In architecture and in decoration they are allied to the edifices of Yucatan, or, rather, the latter are allied to them, for I hold the Tabasco monuments to be the older of the two. The materials employed are different,—here bricks, there stone,—but we recognize in both regions the same civilizing force, the same directing genius, acting upon distinct races, amid different environments. Now this civilizing force, this directing genius, must have come from the Toltecs. If this is so, then we have a date fixed in the history of these Tabasco monuments. It is certain that the Toltecs quit the elevated plains of Mexico in the eleventh century—in 1032 according to Clavigero, a little later according to Veytia. They migrated southward by two routes, one on the Pacific side, the other along the shore of the Gulf. The Pacific division reached Guatemala by the way of Oaxaca

and Tehuantepec; the Gulf division occupied Yucatan, passing through Tabasco. The envoys of Xolotl, king of the Chichimecs, who were the successors of the Toltecs on the Mexican plateau, found them settled and prosperous in Guatemala and Yucatan in 1120. That pacific race which, according to Landa and Cogoludo, invaded Yucatan from the north and the west, civilizing without arms, and persuading without terror, can have been no other than the Toltec; in Java we see a like pacific conquest achieved by the Buddhists. It was with the assistance of the conquered populations,—populations that must have numbered many millions,—that they erected the monuments which are now engaging our attention.

But whence came those earlier populations? Had not America its genesis like the Old World, and the same genesis, too? And are there not theories in abundance to account for this multitudinous population? Besides the autochthonic race, there may have been accessions from other races, emigrations from the north, vessels carried hither by storms, shipwrecks, etc. I hope yet to be able to prove that in Central America various influences have met, especially those of Japanese and Polynesian origin, for we find here the architectural styles and the decorative *motifs* of both. The Toltec knew how to group all these elements,—here adopting the language of the country, there modifying his own architecture, but everywhere leaving his literature, his religion, his astronomy, and many of his customs.

To sum up, we assert that these monuments are Toltec, that they are modern, and that the most ancient of them are not more than eight centuries old. We might add—though this is not history, but simply hypothesis—that the Toltecs may have been preceded here by the Olmecs and the Otomies, other branches of the same family; in that case, the Toltecs would find the field ready for them.

But, aside from this not improbable hypothesis, it is no matter of astonishment that a people possessed of such gifts should have succeeded in establishing in Guatemala, Yucatan, and Tabasco the civilization of which we are now discovering the remains. Had they not in the space of three centuries covered the whole plateau of Anahuac with their cities and their monuments? Was it not easy for them, then, with more abundant means and with a more numerous population, to erect like monuments and to establish a higher grade of civilization in a new country which

they occupied for upward of four centuries—in fact, we might say down to the conquest?

November 16th.—The rain ceased only at noon to-day. The twenty-five Indian laborers went out to the ruins in the morning, but when we arrived they had only cleared away the rubbish from the base of the pyramid, and done but little work on the platform. Hence it was impossible to take any exact measurements of the ruined buildings. I entered the lower story of the tower already mentioned. I also discovered another tower. The lower story of each is under-ground, and I entered both. The four walls come nearer and nearer to one another as they rise, forming a sort of vault by their gradual approximation. Bricks of larger size cover the summit of the vault.

November 17th.—We are here in a singular country, where laborers take life easy. I have at work to-day twenty-five men, to whom I pay thrice as much as I did to the Indians of the high plateaus, yet these do not one-fourth as much work. There is no help for it, for the simplest remark pronounced with the air of authority would provoke a mutiny. They are all blood relations of one another, or at least related by affinity, and if you discharge one you discharge all. The boss, who is supposed to control them, never speaks to them except with the utmost deference. On calling his attention to the fact that in the force of twenty-five laborers there are some mere boys, who, of course, cannot do the work of men, I was requested to tell them myself, for he did not dare to undertake so delicate a commission.

To-day I visited a group of three pyramids to the north of the great pyramid already mentioned. The larger one of this group is thirty-five to forty feet high, and the smaller ones from twenty to twenty-five feet. I had heard these pyramids spoken of frequently, but on none of them did I find anything but shapeless ruins. As for the bricks used in constructing the buildings, they are of all sizes, from 5.9 to 9.8 inches in length. The largest bricks, designed for use in corners, and for other purposes, measure some 16.5 inches long, 12.59 inches wide, and 1.18 inches thick; others 23.62 inches long, 15.75 wide, and 1.77 thick. On the large pyramid I found two bricks, one bearing the profile of a man with feather ornaments on his head, the other a number of concentric circles.

The laborers have now cleared a portion of the platform of the great pyramid. In doing this, they had to cut away a dense

growth of brush-wood and to fell a number of large trees. This pyramid is 115 feet high at its highest point. The buildings upon it are, an immense palace, some 250 feet long, with perfect orientation, the front looking eastward, and the two ends toward the north and south; a rectangular tower to the south of the palace, and another tower of the same shape to the west. They both stood on platforms. This palace forcibly reminds me of the Governor's palace at Uxmal; it is not quite so long, but very nearly as high; and though it is built entirely of bricks and mortar, it must have been covered with ornaments in stucco. This decoration must have been very effective if we are to judge by the scattered pieces of it I have found, and more especially by the fragments of inscriptions, which remind me of those of Yucatan.

Only two chambers remain standing, but these suffice to show a striking resemblance to the buildings at Palenque; and we possess indicia enough to enable us to construct the general plan of the edifice.

That these monuments are of Toltec origin we have the best grounds for believing, although they differ entirely from the buildings on the high plateaus. As was remarked when we were considering the ruins of Tula, the Toltecs were eclectic, and used the materials that happened to be accessible—stone, mortar, bricks, clay, wood. Hence they were prepared for every transformation, and their genius could adapt itself to every mode of construction. We see them employing stone at Mitla; among the Zapotecs, mud mixed with stones, with a facing of bricks forming arabesques; while at Mt. Alban they inaugurated the construction of the *boveda*, that bastard vault of which we have examples here and elsewhere. We see them, on the coast, constructing their pyramids and their edifices of shells, with a few bricks. As they penetrated into the interior, they employed bricks and mortar; but at Palenque, where stone is abundant, they adopted that material, and covered their monuments as well as their streets with the famous cement the secret of which they possessed. In Yucatan, where limestone is very plentiful, they gave up the use of cement for ornamentation, and we have edifices such as are seen at Chichen, Uxmal, etc. Here at Comalcalco I find, in the path leading to the ruins, pieces of cement, the remains of the original pavement.

November 18th and 19th.—Two days of heavy rain; no work done. My *papier maché* casts of sundry ornaments and inscrip-

tions I have placed under shelter, and will have them dried there by artificial heat.

November 20th.—Though the weather is not fair, still work might be done to-day, but the men are unwilling. Fortunately, the ruins are not such as to involve any very extensive excavations, for what with the laziness of these Indians and the difficulty of engaging their services, nothing of importance could have been done.

November 21st.—Though it is Sunday, I have done a fair day's work to-day. I made four photographs of the ruins, viz.: one of the portion of the palace which is still standing, two of the tower to the south of that edifice, and one of a fragment of an inscription. Further, I found amid the rubbish at the tower which lies to the west of the palace a fine bass-relief, badly damaged, it is true, yet presenting a superb figure of a man,—the trunk, one thigh, and a portion of the arms and of the head. This bass-relief will bear comparison with the bass-reliefs of Palenque.

The palace, like the Casa del Gobernador at Uxmal, consists of a double row of chambers, and its length is $234\frac{3}{4}$ feet. The walls were 10.9 feet high, and supported a very prominent cornice, like those at Palenque. The roof rose obliquely, and here, too, we have Palenque repeated. The walls, so far as we can learn from the ruins, were covered with a smooth coat of cement; and I am of the opinion that the many pieces of cement molded into ornamental forms which we have found belonged to the cornice. As at Palenque, the steep roof was covered with ornament, of which only shapeless fragments remain.

The width of the edifice, the walls included, is 24.7 feet; the width of each chamber is $7\frac{1}{2}$ feet, and the thickness of the walls 3.6 feet. The total height of the middle wall is 23.9 feet.

The section of the double row of chambers which is still standing is only 24 feet in length. Soon this great monument will be all reduced to a heap of shapeless ruins.

As I have already remarked, all the buildings at Comalcalco were constructed of bricks and mortar,—bricks of all sizes, separated by layers of mortar of greater thickness than themselves. The central wall, which sustains almost the entire weight of the roof, begins to widen after it reaches the height of the cornice, till it attains the sloping roof at its widest point. It is enormously massive, occupying precisely one-half of the building's total width.

This palace had windows, though nowhere else among these American ruins have I seen any of these openings. There is one window in that portion of the building which still stands: in form it is a parallelogram, and its height is 5.9 feet. In a portion of the wall, toward the center of the façade, there are three other windows near together, of the same shape and size.

Judging from what I have seen of similar monuments at Palenque and in Yucatan, I should say that the chambers must have been not more than 30 feet in length, and thus there would be seven double compartments communicating by interior door-ways. As at Uxmal, the only chambers that had openings to admit the outer air and light were those in the front, facing the east.

The end wall on the south has fallen; of the north wall a part is standing. Furthermore, this latter wall is still covered with the reddish-yellow paint with which it was decorated.

At the distance of 36 feet to the south-east of the palace is tower No. 1, standing on a platform of cement. It measures $26\frac{1}{2}$ feet on the north side by about 30 feet southward, but the latter measurement is only an approximation, for on the south side both platform and walls are in ruin.

This oblong tower had three stories. There is no sign of a stair-way. But the dimensions of the portions which remain, namely, the second story, and the first, which is now underground, show that there must have been a platform at the height of the second story, and that the three stories formed a square tower in four compartments, the dimensions of which for the parts which remain are as follows: Walls of the tower, 2.29 feet thick. First interior chamber 5.57 feet square. Second chamber, forming a sort of veranda, with pillars instead of walls on the west side, 5.41 feet square. The pillars were 37.4 inches square; only one of them remains.

Beneath the second story, completely covered with rubbish, but accessible through a narrow opening, is a chamber, 7.87 feet long by 4.92 feet wide. The *boveda* roof is very steep, while the roof of chamber No. 1, in the story above, is more vault-like. The ornamentation of this tower must have been very elaborate, to judge from the fragments which I have found.

Tower No. 2 stands at the distance of 33 feet to the west of the palace. Its dimensions were the same as those of No. 1. It

was in an under-ground chamber of this tower that I found the bass-relief already described.

This figure, modeled in cement, is less rich in ornamentation than the bass-reliefs of a like character found at Palenque. The body is naked, save that it has a rich belt, an ornament around the leg, and a necklace. It is larger than life-size.

November 22d.—We are still exploring the summit of the great pyramid, and have discovered there other heaps of ruins, but absolutely shapeless and covered with vegetable mold. I am daily receiving information about the ruins scattered all over the State of Tabasco, hidden in the forests. Places like Comalcalco are numerous—great centers of population in former times. The imagination fails to realize the vast amount of labor it would involve to explore even a tithe of these ancient sites. These *Cordilleras* of Comalcalco—these mountains of ruins—extend over twelve miles. We still see the hollows in the ground whence the soil was taken for the construction of these pyramids. But they did not consist merely of clay; bricks, too, entered into their construction, and there were strengthening walls to make them firmer. These structures are more wonderful than the pyramids and the other works at Teotihuacan, and they far surpass the pyramids of Egypt. We can easily believe the assertion of Cortez, that three days after his arrival in this region he had opposed to him an army of more than 80,000 men.

DÉSIRÉ CHARNAY.